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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

TRENDS OF MUSKMELON PRODUCTION AND PRICES BY AREAS

With Particular Reference to
Northeastern States

By
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Washington, D. C.
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SUMMARY

Muskmelons are an important truck crop in the Southern Pacific and Colorado-Utah areas, Georgia, the Carolinas, Michigan, Indiana, Maryland, Delaware, and New Jersey.

Although production has fallen in recent years compared with the peak reached in 1931, it has increased greatly over the last few decades. Lower yields have been offset by greater acreages. Greatest increaes of production occurred in the Southern Pacific, Northern Pacific, and Midwestern areas. Production decreased in the western parts of the Southern area and in Florida. In the Northeast it remained practically unchanged. The production of winter-type melons, such as honeydews, has increased relatively more than the production of cantaloups.

Prices and value per acre were considerably lower in the decade of the 1930's than in the decade of the 1920's, falling in all areas but least in the Southern Pacific area. Declines were relatively great in the Northeastern area, particularly in Maryland. Lower prices were caused mostly by decreased consumer purchasing power, and increased supplies, and poorer quality in some sections. The increased supplies were most effective in lowering prices in the particular season when the supplies were marketed. Increased competition from other areas may be discounted as a prime factor causing the extremely low Northeastern prices of the 1930's -- lower consumer purchasing power being more important.

In the next 5 years demand for muskmelons and prices are expected to be higher than in the decade of the 1930's. However, production in the war years may be curtailed if labor and land now used for muskmelons are needed to produce more essential commodities. Continued disease infestation will also tend to hold production at low levels. But where practicable and not in interference with the war program, production should be encouraged, particularly in areas adjacent to large markets.

In the longer run, a lower level of prices compared with the war years of the 1940's but higher than prices prevailing from 1931-39 seems probable. Production will probably increase to the high levels reached in the late twenties. Areas most likely to expand production are the Southern Pacific, Northern Pacific, and Midwestern areas and the eastern part of the Southern area. Greatest increases are likely in the Southern Pacific area although production increases there and also in parts of the South and in the Northeast are contingent on more adequate disease control and the improvement of quality and yields. In general, areas with good yields of high quality and with multi-variety production may be expected to expand production. Prospects are unfavorable in areas where yields and quality are low and where summer melons are produced for surplus shipment to other areas. A program for improving quality and yields is suggested.

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PRELIMINARY

Recent changes in the production and demand for muskmelons 1/ have

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1/ Muskmelons are generally called "cantaloups" by the trade but to facilitate the identification of different muskmelon varieties this report uses "cantaloup" when referring to the netted varieties. Other muskmelons, such as honeydew, honeyball, Casaba and Persian melons are called "winter-type muskmelons". All varieties combined will be referred to as muskmelons.

"The name 'cantaloup' is quite generally used in the United States to designate the small, oval, netted shipping type of muskmelon. Much confusion over the term has resulted from the fact that in Europe it is applied to a different type of melon, a long-keeping sort with a hard-ridged or warty rind, practically unknown to American growers. The American usage is now so well established that we must accept the name cantaloup as defined above. Obviously, all cantaloups are muskmelons, but many varieties and types of muskmelons are not cantaloups by this definition. The kinds that lie outside the definition are the winter types as Persian, Casaba, and honeyball and the large ribbed sorts like Bender and Montreal." From the Yearbook of Agriculture, 1937, p. 214.

Much of the data issued by the Bureau of Agricultural Economics on muskmelons are listed and grouped under the heading of Cantaloups and Similar Melons.

vitally affected the production situation in the different producing areas. New areas have been developed, whereas in others production has decreased. At the same time, new varieties of muskmelons have been introduced commercially. Prices and yields have generally declined and, in many sections, quality has become poorer.

Farmers in the Northeastern States especially have felt the impact of new developments. Production in the Northeast has been associated with low quality, low yields, and low prices. This report was prepared primarily in response to requests from growers in the Northeast who are interested in past and prospective trends in production and farm prices of muskmelons by areas. But an analysis of trends in production and prices by areas is only part of the background necessary for an appraisal of the farmer's problem of deciding what place he should give to muskmelons in his system of farming. Similar analyses of alternative enterprises, especially substitutable truck crops, are needed as well as information on quantities and prices of labor and materials which the farmer must bring together for the production of muskmelons and alternative crops. The final synthesis of such data is illustrated in a series of reports on "Farm Management Problems and Suggested Adjustments on Farms in Selected Truck Crop Areas", prepared by the Bureau of Agricultural Economics in cooperation with State agricultural experiment stations. 2/

THE MUSKMELON CROP

Muskmelons are grown commercially in most parts of the United States (fig. 1). Production is concentrated in California, Arizona, and Colorado, but great quantities are produced also in Michigan, Indiana, Georgia, the Carolinas, Maryland, Delaware, and New Jersey. Winter varieties of muskmelons are grown on a commercial scale only in the Southwest and in Colorado and Utah. In 1939, farm sales of the muskmelon crop in the United States were valued at 14 million dollars, or 6 percent of the total farm-sales value of 22 commercial truck crops for fresh market shipment and processing (fig. 2).

2/ Mimeographed reports of the Bureau of Agricultural Economics, 1941.
Farm Management Problems and Adjustments on Truck Crop Farms in Franklin township, Gloucester County, New Jersey.
Adjustments on Truck Crop Farms in the Cedarville Area of Cumberland County, New Jersey.
Adjustments on Truck Crop Farms in a Selected Area in Caroline and Dorchester Counties, Maryland.
Adjustments on Truck Crop Farms in the Snow Hill Area of Worcester County, Maryland.
Planning Adjustments on Truck Crop Farms in the Pocomoke Area of Somerset and Worcester Counties, Maryland.
Planning Adjustments on Truck Crop Farms in Wicomico County, Maryland.
Farm Management Problems and Suggested Adjustments on Vegetable Farms in Bristol County, Mass.
Farm Management Problems and Adjustments in Producing Lima Beans and Peas for Quick Freezing, Cumberland County, New Jersey. New Jersey Agricultural Experiment Station, 1941. (Processed)

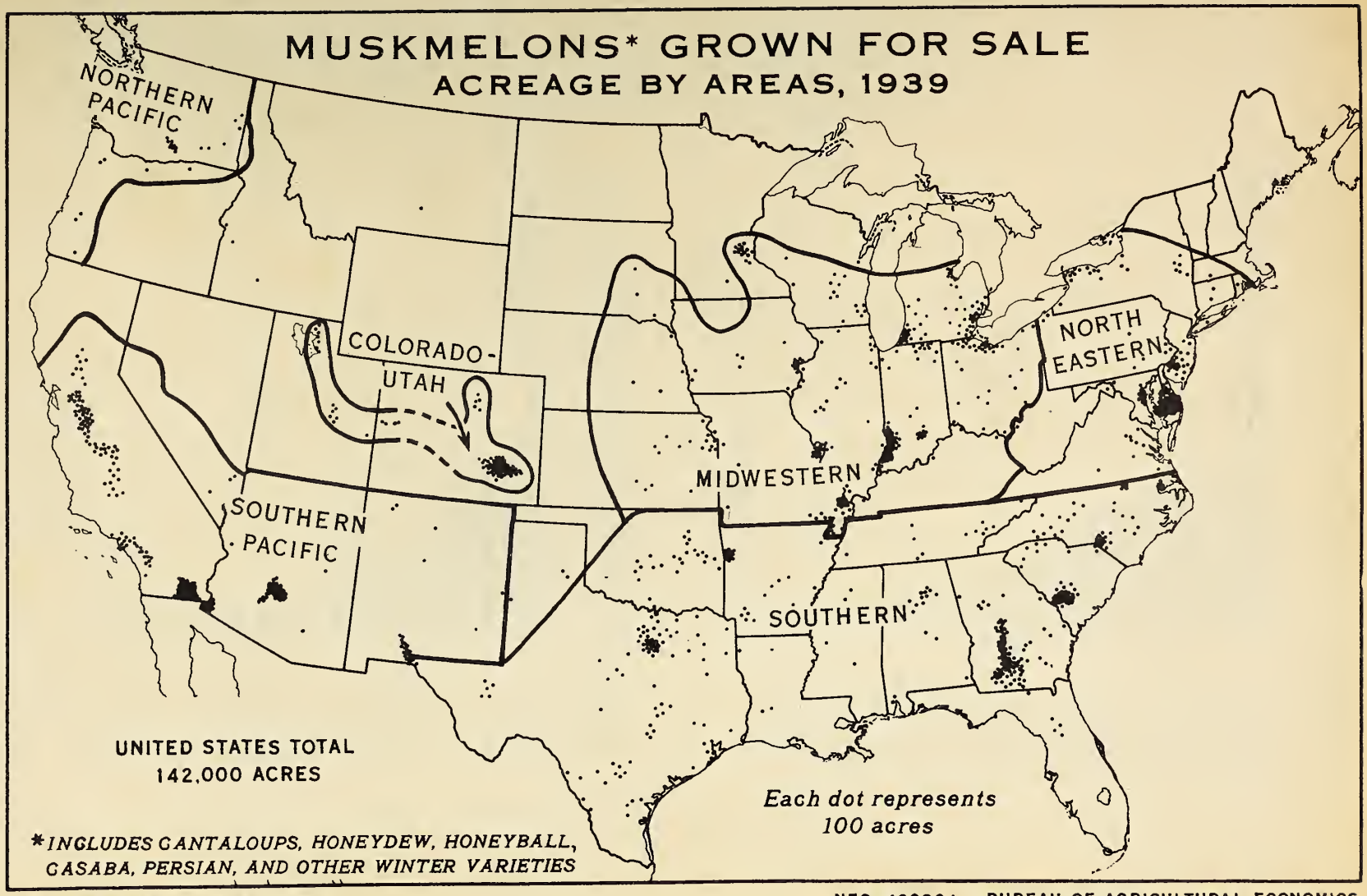

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FIGURE 1

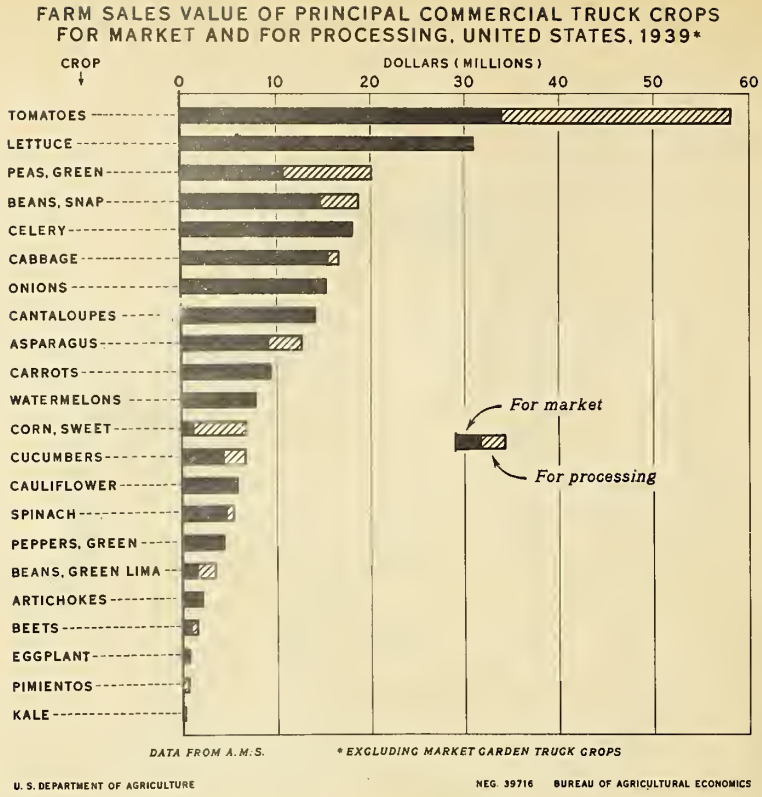

FIGURE 2

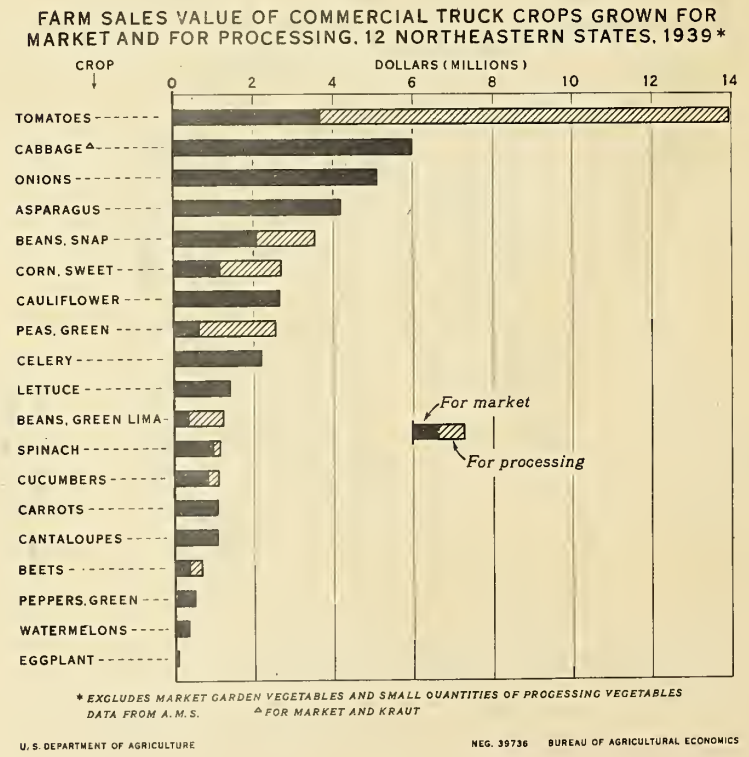

FIGURE 3

Production of muskmelons is concentrated in areas having advantages in soil, climate, rainfall, proximity to markets, and relative costs of production. The crop requires well-drained soils having much rapidly available plant food and plenty of humus to retain moisture. 3/ Well-drained, warm, sandy or silt loams are best suited for production, although good melons are grown on rich clay loams. The climatic requirements of muskmelon cultivation place production on a seasonal basis, domestic supplies being available only from late April to October. Each producing area attempts to market its crop as early in the spring or summer as possible, competition in these seasons being less severe than in others. Production is favored in dry areas in which moisture can be controlled by irrigation. Proximity to markets is not so important for muskmelons as for many other truck crops because only a few areas produce off-season, high-quality, or winter-type melons.

In recent decades, the production of so-called winter-type muskmelons like the honeydew has increased relative to the production of cantaloups (table 1). New winter-type melons were developed in the Western States for their disease-resisting qualities and also to take advantage of consumer preference for a new product. Winter-type melons have competed increasingly with the netted cantaloup varieties, both types being marketed in the summer. In the period 1923-25, 92 percent of shipments of muskmelons were cantaloups. By 1939-41 the proportion of cantaloup shipments decreased to 69 percent, the remaining 31 percent being Persian, honeydew, Casaba, honeyball, and other winter-type melons. Consumers have probably diverted a part of their former expenditures for cantaloups to the purchase of winter-type melons, thereby lessening the demand for cantaloups.

In the Northeast, netted cantaloups are the chief type of muskmelon grown. In 1939, farm-sales value of the crop in 12 Northeastern States amounted to approximately 1 million dollars, or 2 percent of the sales value of truck crops (fig. 3). But 3 percent of the value of farm sales in Maryland and 13 percent in Delaware were derived from the sale of muskmelons. New Jersey is an important producer of muskmelons but the value of the crop is small compared with the value of other crops grown.

PRODUCING AREAS IN THE UNITED STATES

The United States has six muskmelon-producing areas (fig. 1). These are (1) the Northeastern area, (2) the Southern Pacific area, (3) the Southern area, (4) Colorado and Utah, (5) the Northern Pacific area, and (6) the Midwestern area.

The Northeastern area extends along the Atlantic Coast from Virginia to Massachusetts and westward to the borders of Ohio and Kentucky. It is an important supply area for large local markets. These markets also import considerable quantities of high-quality and winter-type melons from other areas in seasons when local production is not practicable as well as in the local producing season which extends from mid-July to mid-September. Most production is

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3/ See Farmers' Bulletin No. 1468, pp. 2-3.

Table 1.- Rail, boat, and truck shipments of different muskmelon varieties 1923-41

Year	Shipments									Percentage cantaloups are of total
	Casaba	Honeyball	Honeydew	Persian	Miscellaneous muskmelons 1/	Mixed muskmelons 2/	Total excluding cantaloups	Cantaloups	Grand total	
	Rail cars	Rail cars	Rail cars	Rail cars	Rail cars	Rail cars	Rail cars	Rail cars	Rail cars	Percent
3/ 1923					1,152		1,152	24,771	25,923	96
4/ 1924					2,565		2,565	28,931	31,496	92
4/ 1925					3,691		3,691	30,308	33,999	89
4/ 1926					6,511		6,511	27,214	33,725	81
4/ 1927					6,553		6,553	30,273	36,826	82
4/ 1928					9,855		9,855	29,071	38,926	75
5/ 1929					11,906		11,906	29,182	41,088	71
5/ 1930	155	2,597	6,134	343		3,155	12,384	24,666	37,050	67
5/ 1931	135	2,750	6,362	428		2,532	12,207	25,780	37,987	67
5/ 1932	132	1,782	4,947	161		2,106	9,128	19,517	28,645	68
5/ 1933	28	1,355	3,649	109		1,464	6,605	15,134	21,739	70
5/ 1934	107	1,209	4,080	197		1,410	7,003	15,393	22,396	69
5/ 1935	84	1,500	5,101	204		1,306	8,195	16,582	24,777	67
5/ 1936	218	1,321	5,528	370		1,158	8,595	17,697	26,292	67
5/ 1937	248	1,487	6,261	333		1,244	9,623	17,754	27,377	65
5/ 1938	247	989	4,969	367		1,263	7,835	15,157	22,992	66
5/ 1939	189	930	4,889	421		1,039	7,468	18,818	26,286	72
5/ 1940	302	705	4,193	693		1,112	7,005	14,384	21,389	67
5/ 1941	350	903	4,896	403		1,517	8,069	17,622	25,691	69

1/ Includes Casaba, honeyball, honeydew, and Persian melons from 1923-29. From 1930-41, shipments for each type are listed separately.
2/ Includes some cantaloups.
3/ No truck shipments or imports included.
4/ Excludes truck shipments but includes imports.
5/ Includes incomplete truck shipments and imports.

concentrated on the Eastern Shore of Maryland, in Delaware, and in southern New Jersey. Diversified family farms produce most of the crop which is limited to the cantaloup varieties. Sandy loams are most widely cultivated. Yields are moderately low and parts of the crop are sometimes quite low in quality. Seed used is not always of the best quality, and even when it is, too much rainfall or attacks of downymildew and aphids may result in a crop of poor quality. The relatively high cost of disease-controlling machinery for the small acreages of melons under cultivation discourages spraying and dusting upon which good quality is dependent. Moreover, many immature melons are marketed. In general, relatively little care is given to the crop, although good-quality melons are grown by some farmers. Some melons are packaged according to the highest standards but others are shipped to market unwashed, ungraded, and in bulk or in second-hand baskets. Costs of transportation, grading, and packing are relatively low. Farm and wholesale prices are low in Maryland and Delaware but are somewhat higher in New Jersey.

The Southern Pacific area includes California, Arizona, Nevada, and New Mexico; it is the primary supply area for the Nation. Principal producing sections are in the Imperial Valley, and in Stanislaus, Kern, Tulare, Los Angeles, Fresno, and San Joaquin Counties in California; also important are the Salt River Valley and Yuma County in Arizona. Specialized large-scale farms produce most of the crop, although in the more northerly sections family farms are important. Both winter-type muskmelons and cantaloups of high quality are produced on irrigated silt loams. These soils as well as the climate are ideal for production, 4/ although in recent years, production in some sections has been adversely affected by powdery mildew disease. Yields are high in California and Arizona. Well-graded and packaged melons are shipped to all markets but particularly to the large northern markets. The Imperial Valley of California supplies the Nation with most of the early melons. Shipments usually start about May 1, reach a peak in June, and extend to the end of July. Central and Southern California and Arizona shipments begin in early June and continue to the end of the summer, reaching a peak in July. Nevada shipments extend from early July to August. New Mexico ships from July to the end of August. The high quality and variety of the melons produced assure a market for the Southern Pacific crop. Farm and wholesale prices are relatively high, offsetting high transportation, packing, and grading costs.

Production in the Southern area is scattered and extends from the South Atlantic Coast westward to Texas and north to Virginia. Georgia and the Carolinas are the chief States. Family farms produce a crop of fair-quality cantaloups which are sometimes poorly packed. Irrigation is practiced in some sections on the sandy loam soils of low fertility. Yields are low. Supplies are shipped to

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4/ Although Southern Pacific melons are now generally of high quality, in the early twenties Southern Pacific producers faced problems of low quality. But with the application of scientific methods of quality determination and crop control, quality was improved. A statement made in the early 1920's by a California horticultural commissioner read, "the establishment of the soluble solids test for determining the maturity of cantaloups has practically revolutionized the cantaloup industry and has been of inestimable value to the growers. Before this method was established, the different interstate markets were demoralized by the continued shipment of green cantaloups, but this system has eliminated all question as to the maturity of our produce and has proved very economical and practical." Yearbook of Agriculture, 1925, p. 74.

local and northern markets mostly in the late spring and early summer. Texas ships a small crop beginning in May, followed by Florida in June; the crop in other sections is marketed during the summer. Farm prices for the crop are relatively low in most sections with the exception of Florida and Texas which ship early crops.

The Colorado-Utah area is a secondary surplus-producing area. Production is concentrated in eastern Colorado and in northern Utah. Family farms grow most of the crop. Irrigated silty loams are used for producing both cantaloups and winter-type melons. Quality is good and the crop is well packaged. Yields and transportation costs are high. Shipments are made to all markets in the late summer, a relatively poor marketing season. Farm prices are low.

The Northern Pacific area is a relatively small supply area shipping cantaloups toward the end of the summer, mostly to local and western markets. Family farms produce most of the crop. Silty and sandy loams are used and many sections, particularly those in Washington, are irrigated. Yields are high, quality is good, but farm prices are relatively low.

The Midwestern area is roughly comparable to the Corn Belt. It is an important source of supply for the large local markets which also obtain supplies from the Southern Pacific and Colorado-Utah areas. Production is on diversified family farms, scattered throughout the area, but there is some concentration in southern Michigan and along the Wabash river in Indiana. Cantaloup varieties are grown on light clay and sandy loams. Yields and costs of transportation are low. Marketing takes place in nearby cities from mid-July to the end of September at the same time that many Southern-Pacific and Colorado-Utah melons are marketed. Farm prices are high in Michigan and Ohio but lower in Indiana, Kansas, and Illinois.

PRODUCTION AND PRICE TRENDS

Before the turn of the century, muskmelons were grown largely as a summer market-garden crop near consuming centers. Transportation difficulties prevented shipments from any distance. Since 1900, however, many technological obstacles to shipment have been overcome, and muskmelons are now available for a good part of the year. Supplies are shipped from surplus-producing areas to northern markets in seasons when supplies were formerly not available, as well as in seasons of local northern production. Thus, in the last few decades, the concentration of production has shifted to the Southern Pacific area. California and Arizona alone produced 54 percent of the United States crop in 1937-40. By contrast, the Northeastern area produced only 11 percent of the crop. Production in this area has become relatively less important as production has expanded in the South and West.

United States production has increased greatly. Besides improved transportation facilities, other factors such as the opening of new producing sections, the development of new varieties, the long-time upward demand trend, and the decline of some farm alternatives have contributed to the increase.

In achieving greater production, it has been necessary to plant relatively greater acreages to offset lower yields. Data available since 1918 show an increase of 64 percent in the United States acreage of muskmelons grown for market between the periods 1918-23 and 1936-41. 5/ But production increased only 32 percent, rising sharply until 1931 and then falling somewhat (fig. 4). Yields declined 20 percent (fig. 5). Lower yields were caused largely by greater disease infestation, lower prices, and decreased soil fertility resulting from depleting crop practices.

A relatively great decline of value per acre was caused by the falling yields. Between 1918-23 and 1936-41, United States value per acre fell 50 percent, slightly more than the decline in average value per acre for all market truck crops. Prices declined about the same as other market truck crops, falling 36 percent (fig. 6). Lower levels of consumer purchasing power, and greater supplies in particular seasons, as well as lower quality and lower costs, 6/ caused the lower prices. Averaged according to demand conditions in different periods, United States prices fell from a high of $1.69 per crate in the period 1918-23 to $1.36 per crate in the period 1924-30. In 1931-33 a low of 89 cents per crate was established. By 1936-41 some recovery had set in with the average price at $1.08 per crate.

Trends by Areas.

Trends of muskmelon production in different areas have varied because of differences in yield, the quality and type of melon grown, alternative farm opportunities, relative prices, the relative economic development of the area, and differences in selling conditions such as proximity to markets and marketing seasons. Each area attempts to market its crop when competition from other areas is limited by adverse climatic and other conditions. Even so, supplies are abundant in certain seasons and scarce in others, competition becoming more severe in late spring and summer.

The producing sections that market their crops in the same season have been designated by the Agricultural Marketing Administration as follows: (1) early, (2) second early, (3) intermediate, and (4) late (table 2). 7/ Early marketings extend from May to July, second early marketings from June to mid-September, intermediate marketings from July to the end of September, and late marketings from mid-July to mid-October. In the following analysis, each area is subdivided according to the marketing season of its different sections.

5/ In table 3 comparisons of the periods 1918-23 and 1936-41 are used for convenience in summarizing trends. But these periods do not in every case indicate the complete trend situation. Reference should also be made to figures 4, 5, and 6.
6/ The number of man hours required to produce 100 crates of melons in the United States declined 6 percent between 1918-21 and 1932-36. In some regions, such as the Eastern Dairy region which includes much of the Northeastern area, the number of man hours declined 26 percent in the same period. See National Research Project, Work Projects Administration "Changes in Technology and Labor Requirements in Crop Production - Vegetables". (1939) p. 55.
7/ These shipping groups do not denote distinct growing seasons. They are based on the time harvesting begins and when peak shipments occur in a section. There is some overlapping between shipping groups. For example, second early shipments continue until the last late shipments are made.

PRODUCTION OF MUSKMELONS FOR MARKET, BY AREAS AND FOR THREE NORTHEASTERN STATES, 1918-41

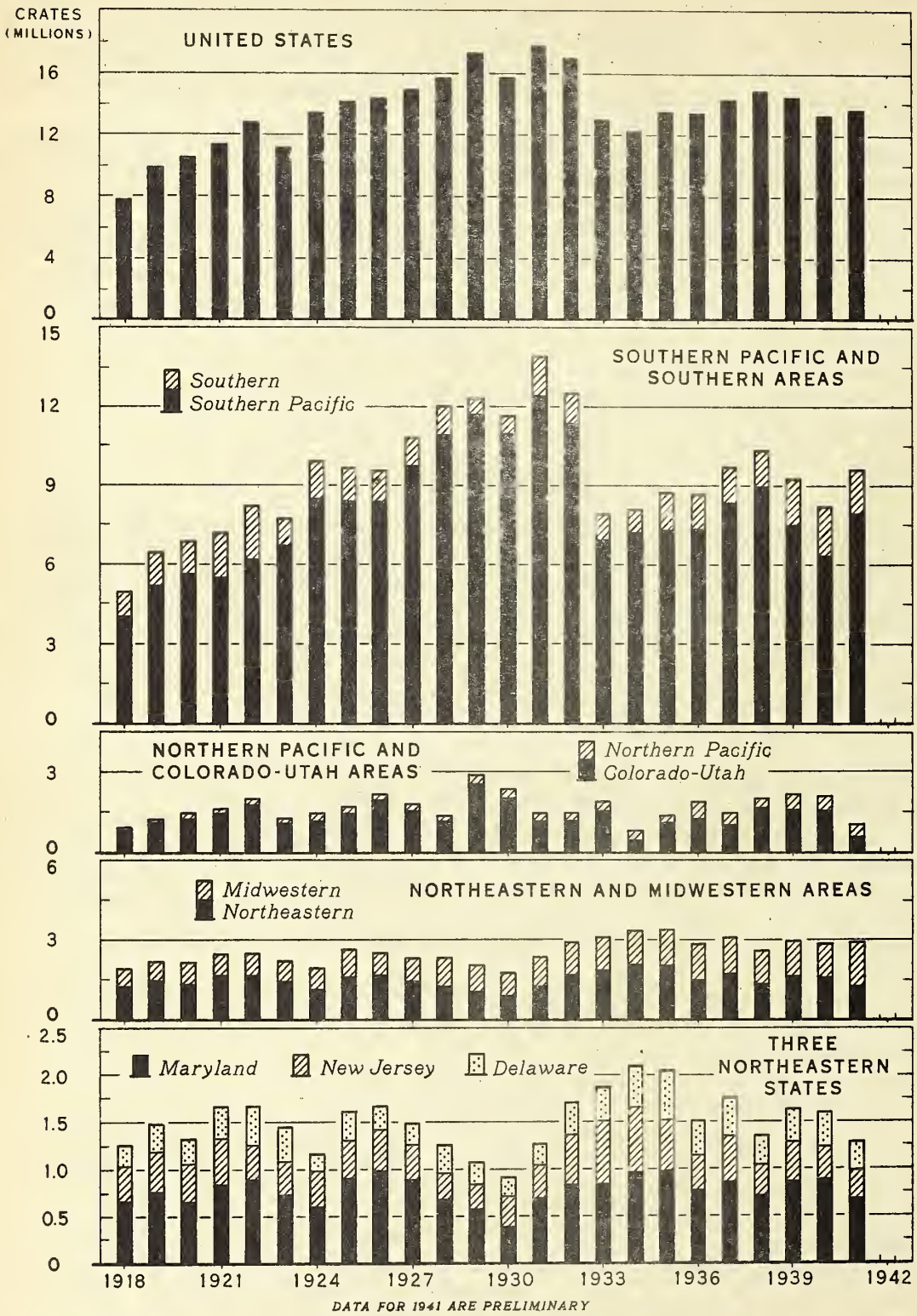

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FIGURE 4

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YIELD PER ACRE OF MUSKMELONS FOR MARKET, BY AREAS AND FOR THREE NORTHEASTERN STATES, 1918-41

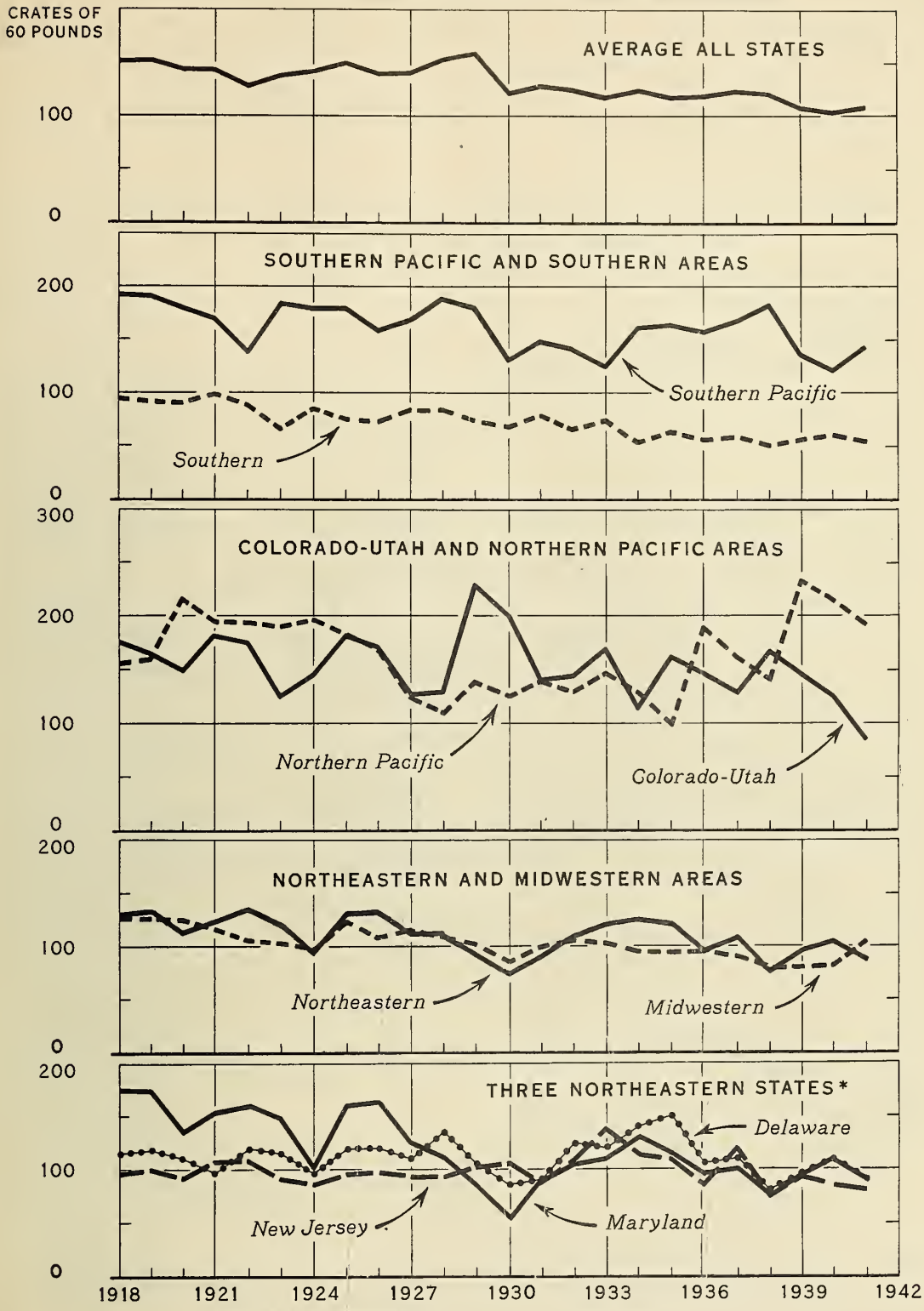

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FIGURE 5

PRICE RECEIVED BY FARMERS FOR MUSKMELONS FOR MARKET, BY AREAS AND FOR THREE NORTHEASTERN STATES, 1918-41

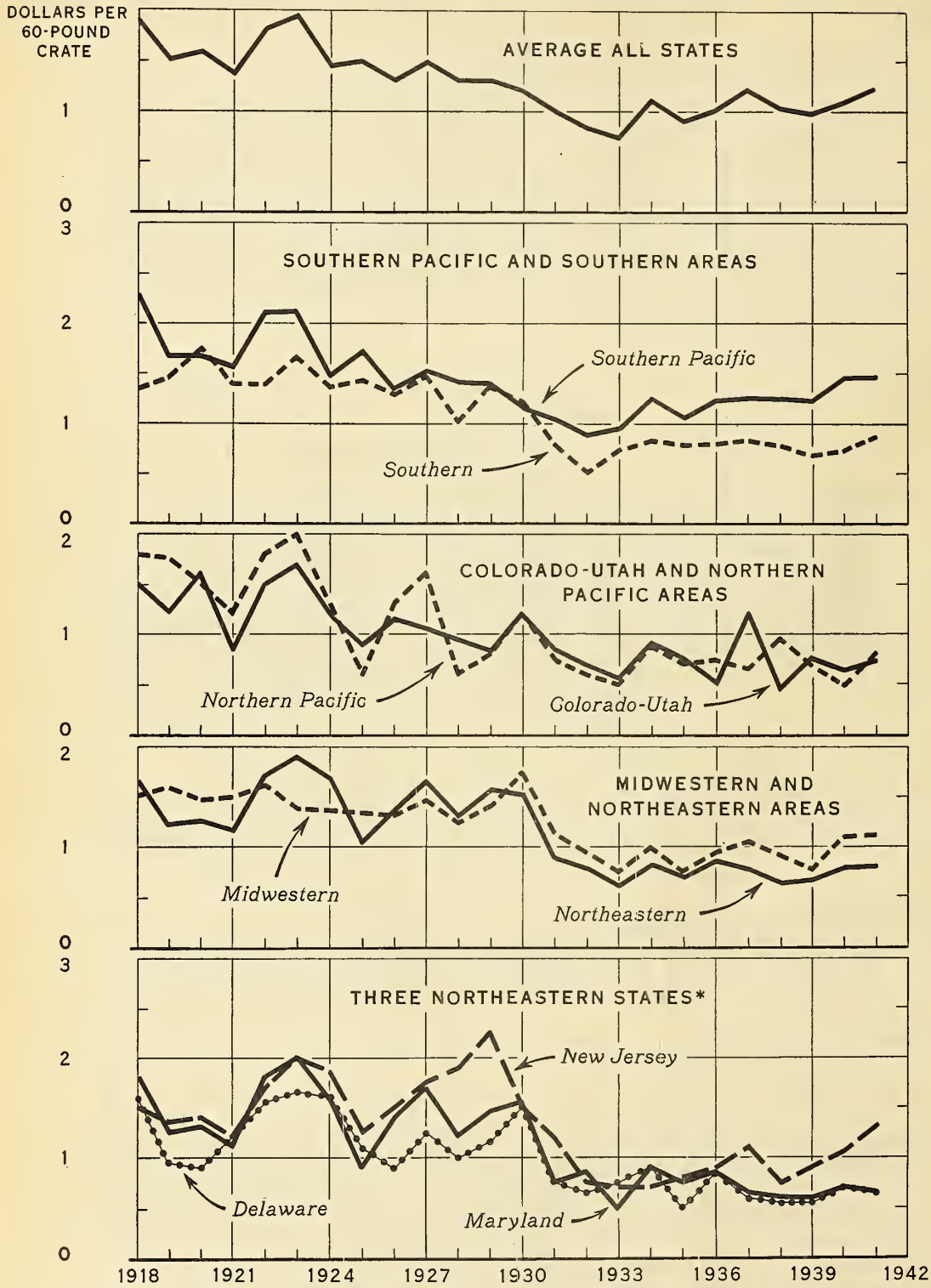

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FIGURE 6

Table 2.- Approximate harvesting and marketing seasons and principal producing sections for muskmelons

Group and State	Usual period of harvesting and marketing	Principal producing sections
Early:		
California (Imperial Valley)	May 1 - July 31	Imperial Valley
Florida	June	Hamilton, Marion Counties
Second early:		
Arizona	June 15 - Aug. 15	Salt River Valley, Yuma district
Arkansas	July 1 - Aug. 31	Hempstead, Crawford, Sevier, Craighead Counties
California, other	June 1 - Oct. 15	Stanislaus, Kern, Tulare, Los Angeles, San Joaquin Counties
Georgia	June 10 - July 31	Worth, Mitchell Counties
Nevada	July 1 - Aug. 10	Clark County
North Carolina	July	Scotland, Chowan, Warren Counties
Oklahoma	July 15 - Aug. 15	Okfuskee, Grady, Pottawatomie, Muskogee, Bryan, Jefferson Counties
South Carolina	June 15 - July 15	Barnwell, Bamberg Counties
Texas	May 10 - Sept. 15	Webb, Dimmit, Zavala, Atascosa, Frio, Bastrop, Reeves, Ward, Parker, Wise Counties
Intermediate:		
Delaware	July 20 - Aug. 25	Sussex, Kent Counties
Illinois	July 15 - Sept. 10	Jackson, Union, White, Gallatin, Cass, Mason, Tazewell, Carroll, Henderson, Madison, Clark, Lawrence Counties
Indiana	July 10 - Sept. 20	Knox, Gibson, Jackson, Sullivan, LaGrange, Elkhart, DeKalb, Bartholomew, Daviess, Posey Counties
Maryland	July 15 - Aug. 25	Wicomico, Dorchester, Anne Arundel, Caroline Counties
New Mexico	July 1- Aug. 31	Dona Ana County
Washington	July 15 - Sept. 30	Yakima, Spokane, Benton, Franklin, Grant Counties
Late:		
Colorado	Aug. 5 - Oct. 15	Arkansas Valley, Weld, Adams Counties, Grand Junction area
Iowa	July 20 - Aug. 31	Muscatine County
Kansas	Aug. 1 - Sept. 30	Kansas River (Kaw) Valley
Michigan	Aug. 1 - Sept. 30	Berrien, Monroe, Bay, Van Buren
New Jersey	July 15 - Sept. 25	Swedesboro, Burlington, Hammonton districts
Ohio	Aug. 1 - Sept. 20	Lucas, Pickaway, Montgomery, Sandusky Counties
Oregon	Aug. 15 - Oct. 15	Yamhill, Douglas, Wasco, Marion, Lane Counties
Utah	Aug. 10 - Oct. 10	Emery, Box Elder, Grand Counties

The Southern Pacific and Southern Areas

Production in the Southern Pacific area increased 39 percent between 1918-23 and 1936-41, although it declined somewhat from the peak reached in 1931 (table 3). In some sections production has been introduced only in recent years. This area has benefited from improved transportation facilities and from the production of good-quality and winter-type melons. Although yields decreased 12 percent between 1918-23 and 1936-41, they fell less than in most other areas and still remained well above the United States average. Moreover, a large proportion of the crop has been marketed at high prices in seasons when competition is limited. Prices fell 31 percent, but they did not decline as greatly as in other areas, partly because a greater proportion of high-priced, winter-type melons have been marketed in recent years (table 4). Also, good quality has been maintained. The variable nature of harvesting and other costs requiring fairly large cash outlays at harvest time limits the degree of price decline, because growers refuse to incur these costs when prices are too low. Thus, between 1918-23 and 1936-41, value per acre declined 42 percent. This was less than the decline in other areas.

In the different sections of the Southern Pacific area, divergent trends occurred. Production of the early crop in the Imperial Valley of California has increased less than production in the other important Southern Pacific sections. Although production increased sharply between 1918 and 1932, in recent years lower prices and the destructive effects of powdery mildew disease have caused acreage, yields, and production to decline. Between 1918-23 and 1936-41, yields fell 19 percent. 8/ Production increased only 10 percent. Prices fell 32 percent; and because of the lower yields, value per acre fell more than in other sections, 49 percent.

Production of the second early crop in Arizona, central California, and Nevada increased 99 percent. Prices fell 25 percent. These sections were less affected by falling yields than other sections and value per acre declined only 27 percent, falling most in Arizona. Production has moved steadily upward, although it has been arrested in recent years by lower prices and increased competition. Production has increased particularly in Arizona, sharply higher acreages offsetting lower yields. Both higher acreage and yields contributed to increased production in central California.

Of minor importance, intermediate production in New Mexico fell 46 percent between 1918-23 and 1936-41, yields declining 36 percent. Value per acre fell 40 percent, the sharply lower yields causing most of the decline; prices fell only 7 percent. In Nevada, in addition to a small second early crop, a small late crop has been introduced in recent years.

8/ By 1937, a mildew-resistant melon was developed, after powdery mildew disease had affected the crop for some years. Yields in 1937-38 averaged 180 crates to the acre. But the appearance of a new type of powdery mildew disease in 1939 caused yields to decline almost one-half to an average of 96 crates to the acre in the years 1939-40. (1940 was a bad year for other reasons also. Earthquakes and insects contributed to lower yields). In 1941, reduced acreage and greater care raised yields to 134 crates per acre.

Southern Area

Production of cantaloups in the Southern area increased 15 percent between 1918-23 and 1936-41, but fell considerably between 1922-29. An increase of 80 percent in acreage was offset by a 36-percent decline of yields, as a result of greater disease infestation and lower soil fertility. Compared with other areas, yields are very low. Little spraying, dusting, or other crop care is practiced in most sections and cantaloups of only moderate quality are produced. Yet, the improvement of transportation facilities, particularly motortrucking, and the relative proximity to northern markets have caused some increase of production. The lower level of Southern Pacific production in recent years also may have been important as well as low farm income from cotton, which has tended to encourage production of alternative crops like cantaloups. Yet between 1918-23 and 1936-41, value per acre fell 66 percent, prices falling 47 percent. The poorer quality, and the relatively fixed nature of costs on family farms were in part responsible for the relatively great price decline. (Harvesting and marketing costs are largely overhead costs and not cash outlays so that the crop is harvested for what it will bring.)

Not all Southern sections have increased production. Although Florida early production is favored by high prices and by yields relatively high compared with the rest of the Southern area, production decreased 50 percent between 1918-23 and 1936-41. Prices fell 29 percent and value per acre 25 percent. In this section, production of cantaloups has been relatively unfavorable, value per acre being lower than for other truck crops.

Combined second early production in the Southern area increased 21 percent, but there were variations. In Arkansas, low yields, low quality, and the long haul in marketing caused production to decline. On the other hand, production was greatly increased in the southeastern seaboard States despite sharply falling yields. Proximity to large markets, easily accessible by truck, contributed to this trend. Prices and value per acre in the second early sections, compared with other Southern sections, fell most, 47 percent and 67 percent respectively. Greatest declines occurred in Arkansas and Oklahoma.

Intermediate production in Tennessee has ceased entirely, largely because of sharply declining yields.

Northern Pacific and Colorado-Utah Areas

Production in the Northern Pacific area increased markedly, 262 percent, between 1918-23 and 1936-41. This area still remains relatively unimportant, although increasingly high yields of good quality, expanding local markets, and the relatively recent introduction of the crop in some sections, have stimulated production greatly. The lateness of the marketing season has been a retarding factor. Prices declined 57 percent, more than in other areas because of the relatively great increase of production. Value per acre fell 58 percent.

Between 1918-23 and 1936-41, the Colorado-Utah area increased production only 2 percent after reaching a peak in the late twenties. An acreage increase of 21 percent was practically offset by a decline of 16 percent in yields, resulting partly from the recent introduction of production in Utah where yields, as well as value per acre are lower than in Colorado. Although transportation facilities have improved and although good-quality winter melons and cantaloups

Table 3.- Acres for harvest, yield, and production and change of acres for harvest, yield, and production for the commercial crop of muskmelons for market, by areas and marketing groups, averages 1918-23 and 1936-41 1/

Area and marketing group	Acreage				Yield				Production 2/			
	Average 1918-23	Average 1936-41	Change		Average 1918-23	Average 1936-41	Change		Average 1918-23	Average 1936-41	Change	
	Acres	Acres	Acres	Percent	Crates 3/	Crates 3/	Crates 3/	Percent	1000 crates 3/	1000 crates 3/	1000 crates 3/	Percent
Southern Pacific												
Early 4/	19,513	26,567	7,054	36.2	173.4	140.4	-33	-19.0	3,384	3,730	346	10.2
Second Early 5/	11,723	23,935	12,212	104.2	167.8	163.4	-4.4	-2.6	1,968	3,910	1,942	98.7
Intermediate 6/	1,272	1,060	-212	-17.7	176.1	113.2	-62.9	-35.7	224	120	-104	-46.4
Late 7/	---	8	8	---	---	125	125	---	---	1	1	---
Total or average	32,508	51,570	19,062	58.6	171.5	150.5	-21.0	-12.2	5,576	7,761	2,185	39.2
Southern												
Early 8/	952	450	-502	-52.7	65.1	68.9	3.8	5.8	62	31	-31	-50.0
Second Early 9/	14,167	27,159	12,992	86.8	88.7	56.1	-32.6	-36.8	1,257	1,524	267	21.2
Intermediate 10/	215	---	-215	-100.0	148.8	---	-148.8	---	32	---	-32	-100.0
Total or average	15,334	27,609	12,225	80.1	88.1	56.3	-31.8	-36.0	1,351	1,555	204	15.1
Northern Pacific												
Intermediate 11/	756	1,958	1,202	159.0	189.2	198.6	9.4	5.0	143	389	246	172.0
Late 12/	---	782	782	---	---	165.7	163.7	---	---	128	128	---
Total or average	756	2,740	1,984	262.4	189.2	188.7	-.5	-.3	143	517	374	261.5
Colorado-Utah												
Late	7,732	9,365	1,633	21.1	161.1	135.6	-25.5	-15.8	1,246	1,270	24	1.9
Midwestern												
Intermediate 13/	4,778	8,807	4,029	84.3	112.4	73.8	-38.6	-34.3	537	650	113	21.0
Late 14/	2,022	6,712	4,690	231.9	123.1	106.4	-16.7	-13.6	249	714	465	186.7
Total or average	6,800	15,519	8,719	128.3	115.6	87.9	-27.7	-24.0	786	1,364	578	73.5

- Continued

Table 3.- Acres for harvest, yield, and production and change of acres for harvest, yield, and production for the commercial crop of muskmelons for market, by areas and marketing groups, averages 1918-23 and 1936-41 1/ --Continued

Area and marketing group	Acreage				Yield				Production 2/			
	Average 1918-23	Average 1936-41	Change		Average 1918-23	Average 1936-41	Change		Average 1918-23	Average 1936-41	Change	
	Acres	Acres	Acres	Percent	Crates 3/	Crates 3/	Crates 3/	Percent	1000 crates 3/	1000 crates 3/	1000 crates 3/	Percent
Northeastern												
Intermediate	7,627	11,950	4,323	56.7	140.3	95.1	-45.2	-32.2	1,070	1,136	66	6.2
Delaware	2,815	3,517	702	24.9	112.3	98.1	-14.2	-12.6	316	345	29	9.2
Maryland	4,812	8,433	3,621	75.2	156.7	93.8	-62.9	-40.1	754	791	37	4.9
Late, New Jersey	4,068	4,167	99	2.4	99.3	89.5	-9.8	-9.9	404	373	-31	-7.7
Total or average	11,695	16,117	4,422	37.8	126.0	93.6	-32.4	-25.7	1,474	1,509	35	2.4
United States	74,825	122,920	48,095	64.3	141.3	113.7	-27.6	-19.5	10,576	13,976	3,400	32.1

1/ 1941 preliminary.
2/ Production includes some quantities not harvested because of market conditions.
In 1936 - Arizona - 410,000 crates
In 1938 - Arizona - 294,000; California (early) 1,238,000; Colorado 632,000
In 1940 - Washington - 63,000; Georgia 52,000
In 1941 - Indiana - 200,000
3/ In terms of standard crates (45's) containing approximately 60 pounds.
4/ California
5/ Arizona, California, Nevada
6/ New Mexico
7/ Nevada
8/ Florida
9/ Arkansas, Georgia, North Carolina, South Carolina, Oklahoma, Texas
10/ Tennessee
11/ Washington
12/ Oregon
13/ Indiana, Illinois, Missouri
14/ Iowa, Kansas, Michigan, Ohio

Compiled from reports of the Bureau of Agricultural Economics.

Table 4.- Farm price per crate, value per acre and change in price and value per acre for the commercial crop of muskmelons for market, by areas, and marketing groups, averages 1918-23 and 1936-41 1/

Area and group	Price per crate 2/				Value per acre			
	Average 1918-23	Average 1936-41	Change		Average 1918-23	Average 1936-41	Change	
	Dollars	Dollars	Dollars	Percent	Dollars	Dollars	Dollars	Percent
Southern Pacific								
Early 3/	2.17	1.48	-.69	-31.8	376.57	196.56	-180.01	-47.8
Second early 4/	1.49	1.12	-.37	-24.8	250.62	183.12	-67.50	-26.9
Intermediate 5/	1.24	1.16	-.08	-6.5	218.55	131.13	-87.42	-40.0
Late 6/	---	1.00			---	125.00	125.00	
Average	1.89	1.31	-.58	-30.7	324.97	188.97	-136.00	-41.9
Southern								
Early 7/	1.72	1.23	-.49	-28.5	112.39	84.44	-27.95	-24.9
Second early 8/	1.47	.78	-.69	-46.9	129.74	43.26	-86.48	-66.7
Intermediate 9/	1.37	---			204.65	---		
Average	1.48	.78	-.70	-47.3	129.71	43.93	-85.78	-66.1
Northern Pacific								
Intermediate 10/	1.66	.65	-1.01	-60.8	314.82	125.64	-189.18	-60.1
Late 11/	---	.99			---	145.78		
Average	1.66	.71	-.95	-57.2	314.82	131.39	-183.43	-58.3
Colorado-Utah								
Late	1.38	.71	-.67	-48.6	222.19	87.88	-134.31	-60.4
Midwestern								
Intermediate 12/	1.51	.80	-.71	-47.0	182.00	55.98	-126.02	-69.2
Late 13/	1.49	1.13	-.36	-24.2	177.55	119.79	-57.76	-32.5
Average	1.51	.98	-.53	-35.1	172.65	83.57	-89.08	-51.6
Northeastern								
Intermediate	1.48	.67	-.81	-54.7	207.03	63.51	-143.52	-69.3
Delaware	1.33	.65	-.68	-51.1	149.20	63.97	-85.23	-57.1
Maryland	1.54	.68	-.86	-55.8	240.86	63.32	-177.54	-73.7
Late, New Jersey	1.50	1.00	-.50	-33.3	148.97	89.51	-59.46	-39.9
Average	1.48	.75	-.73	-49.3	186.83	70.24	-116.59	-62.4
United States	1.69	1.08	-.61	-36.1	238.80	118.55	-120.25	-50.4

1/ 1941 preliminary.
2/ Standard crates (45's) containing approximately 60 pounds.
3/ California (Imperial Valley)
4/ Arizona, other California, Nevada
5/ New Mexico
6/ Nevada
7/ Florida
8/ Arizona, Georgia, North Carolina, Oklahoma, South Carolina, Texas
9/ Tennessee
10/ Washington
11/ Oregon
12/ Indiana, Illinois, Missouri
13/ Iowa, Kansas, Michigan, Ohio

Compiled from reports of the Agricultural Marketing Service.

are produced in this area, the season of production is in the late summer when local production is available in most areas and when consumer demand is not favorable. Value per acre declined sharply because of lower yields and prices and the relatively recent expansion of acreage in Utah. Prices fell 47 percent, whereas value per acre fell 60 percent. Poorer quality and increased late production in other areas contributed to the relatively great fall of prices.

The Midwest and Northeast

In the Midwestern area, acreage increased 128 percent between 1918-23 and 1936-41, but a decline of 24 percent in yields caused production to increase only 74 percent. Lower soil fertility, disease, and expansion to lower grade land were probably most important in causing yields to fall. However, expanding local markets, and the fair quality of the melons produced caused greater acreages to be planted. Prices declined 35 percent, but lower yields caused value per acre to fall 52 percent.

The late sectionsof the Midwestern area in Iowa, Kansas, Michigan, and Ohio expanded production most. Between 1918-23 and 1936-41, these sections increased production 187 percent, much of the increase taking place in Southern Michigan. Acreage increased 232 percent, but yields fell 14 percent. Prices fell only 24 percent, despite sharply rising production, while value per acre fell 33 percent. Intermediate sections in Illinois and Indiana increased production only 21 percent, acreage increasing 84 percent but yields falling 34 percent. Value per acre fell 69 percent, prices falling 47 percent.

Northeastern production has increased less than production in most other areas, chiefly because of unfavorable growing conditions, lower prices, and to a lesser extent increased competition from other areas. Between 1918-23 and 1936-41, the three producing States in the Northeastern area increased their production only 2 percent. Although acreage increased 38 percent, yields declined 26 percent. The use of poorer land, lower fertility, less care and especially greater disease infestation have caused yields to fall, particularly in Maryland. Lower prices coupled with the lower yields caused value per acre to decline greatly. Prices fell 49 percent, and value per acre 62 percent.

Sections producing the intermediate crop in Maryland and Delaware increased production 6 percent. Prices fell 55 percent and value per acre 69 percent. Delaware increased production 9 percent, acreage increasing 25 percent and yields falling 13 percent; acreage in Maryland rose 75 percent but a decline of 40 percent in yields caused production to increase only 5 percent. Prices fell 56 percent and value per acre 74 percent, a great decline compared with other areas and sections and also compared with the value per acre of other truck crops grown in the area. This indicates that production of cantaloups has become relatively less profitable. Yields for New Jersey's late crop decreased 10 percent; acreage increased 2 percent, and production 8 percent. Prices and value per acre fell relatively less than in other Northeastern sections, falling 33 percent and 40 percent respectively.

Price Factors

Prices of muskmelons vary greatly between different areas, the variation depending on differences in the quality and type of melon grown and the proximity of each area to prime markets. Also of great importance are the differences in the marketing seasons of the different areas.

Each year the price of muskmelons follows a fairly consistent seasonal trend, the price varying inversely with the supply (fig. 7). Areas that ship muskmelons in the spring when supplies are small receive relatively high prices. Prices in early shipping sections usually rank highest, followed by prices in the second early, late, and intermediate sections. Northeastern melons, which are marketed in the summer, bring relatively low prices. Maryland and Delaware prices are rather low while New Jersey prices are higher.

Even at given times, prices differ for the same variety of muskmelon. In 1939, because of superior quality, California cantaloup prices were considerably higher than Northeastern prices, in the same weeks and under similar conditions. A differential of as much as $2.00 a crate for California melons as compared with Northeastern melons, was common (table 7). 9/

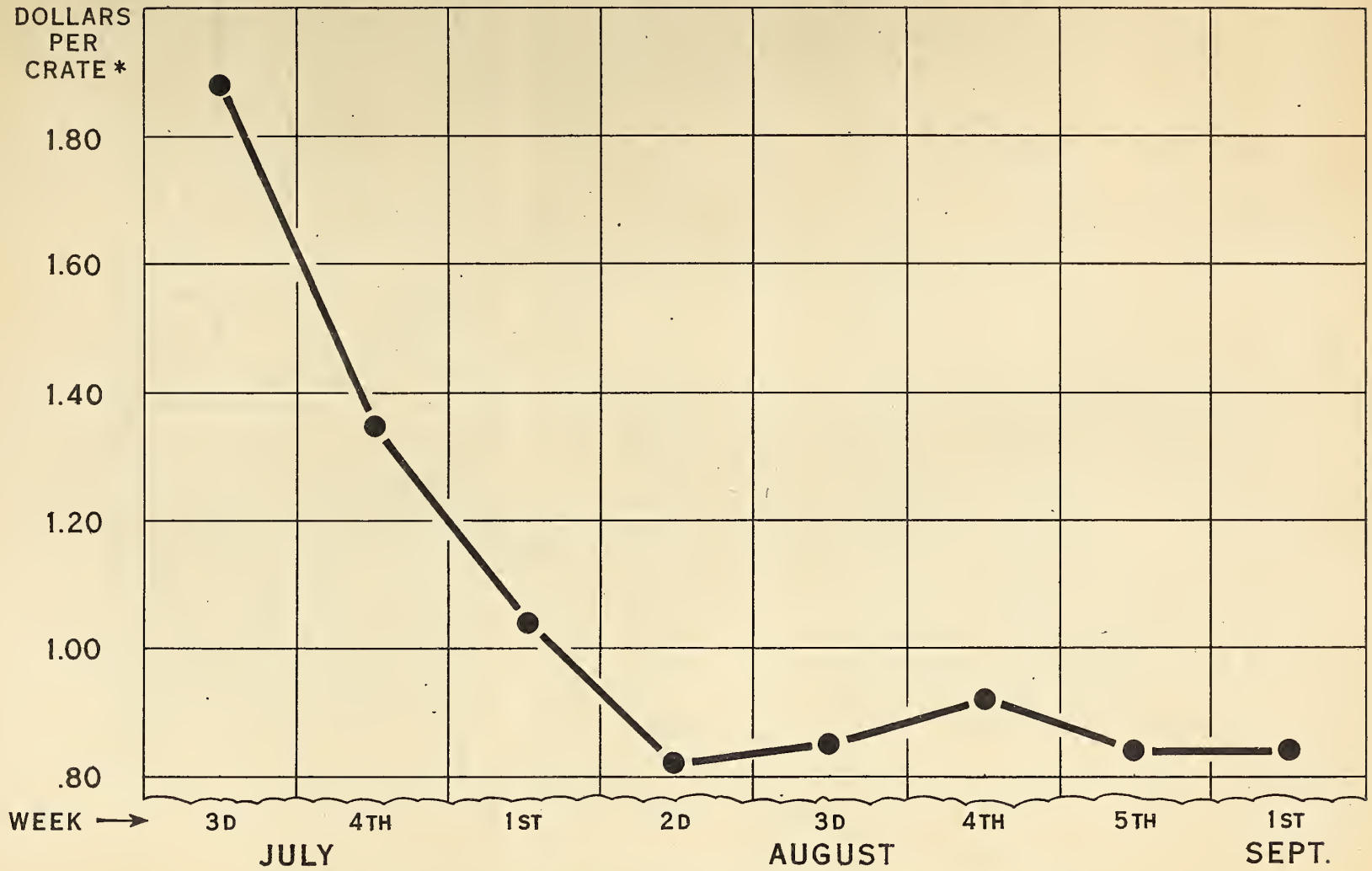
The differences of prices between areas, plus the differences of yields are reflected in sharp differences in the value of sales realized per acre (table 4). The Southern Pacific area has the highest value per acre compared with other areas. In 1936-41, value averaged $189 per acre. In contrast, average value per acre in the Southern area was only $44 per acre. Generally, value per acre in the Northern Pacific area ranks next in value in the Southern Pacific area, followed in order by values in the Colorado-Utah, Midwestern, Northeastern, and Southern areas. Although lower yields have been important, falling prices have been most significant in causing the lower values of recent years.

What has caused the decline of prices and why have different areas experienced different degrees of decline? Several broad factors affecting all areas should be considered in answering these questions: (1) The general price level, (2) demand, and (3) supply. Particular conditions existing in specific areas, such as the volume of production in an area, quality, varietal factors, alternatives and local demand conditions, are influential in causing different degrees of decline between different areas.

General economic conditions affect prices of muskmelons in much the same way as they affect the prices of all other commodities. The level of all commodity prices, farm prices, prices of truck crop, and also prices of muskmelons, follow similar broad trends. In the decade of the 1930's, economic conditions caused lower commodity prices including lower muskmelon prices.

9/ This differential was used largely to pay for the freight costs of shipping California melons to New York City. In 1940, it cost $1.52 to ship a standard 68-pound crate of cantaloups in carlots from the Imperial Valley of California to New York City (table 6). This freight charge alone was about twice the price that was received for many Maryland cantaloups. Yet, because of the superior quality, California melons compete with Maryland melons.

WHOLESALE PRICE OF EASTERN SHORE OF MARYLAND AND DELAWARE CANTALOUPS, NEW YORK CITY, AVERAGE 1933-40



*STANDARD CRATE OF 36 MELONS WEIGHING APPROXIMATELY 60 POUNDS

U. S. DEPARTMENT OF AGRICULTURE NEG. 42408 BUREAU OF AGRICULTURAL ECONOMICS

FIGURE 7

Associated with the influence of general economic conditions on prices of muskmelons is the level of demand. The amount of money available to consumers chiefly determines how many muskmelons can be sold at given prices. In the decade of the 1930's, consumer purchasing power was relatively low. Although increased population and changing food habits tended to increase demand, these forces were not sufficient to offset the decline of purchasing power and muskmelon prices fell.

The supply of muskmelons also affects prices. But supplies have had most effect on prices in seasons when they are marketed. Thus increased production in early areas has lowered early prices, but has not affected the prices of late melons to any great extent because the marketing seasons for these two crops are different; some indirect effects may have been felt because of market saturation by the early melons.

On the other hand, greatly increased production of second early melons in the Southern and Southern Pacific areas has tended to lower prices in these areas and also in the Northeastern area, because the Northeast markets its crop in many of the same weeks that the second early crop is marketed. The second early melons of the Southern Pacific area have especially contributed to lower Northeastern prices because they have been of relatively high quality, being mature, carefully graded, well packed and high in sugar content. Moreover, many are winter varieties. (The larger quantities of the high-prices winter-type melons that have been marketed by the Southern Pacific area partially explains why Southern Pacific prices have been relatively firm, even though production increased relatively more in the Southern Pacific area than in the Northeastern area). Some increased production in the Northeast itself has contributed to lower prices.

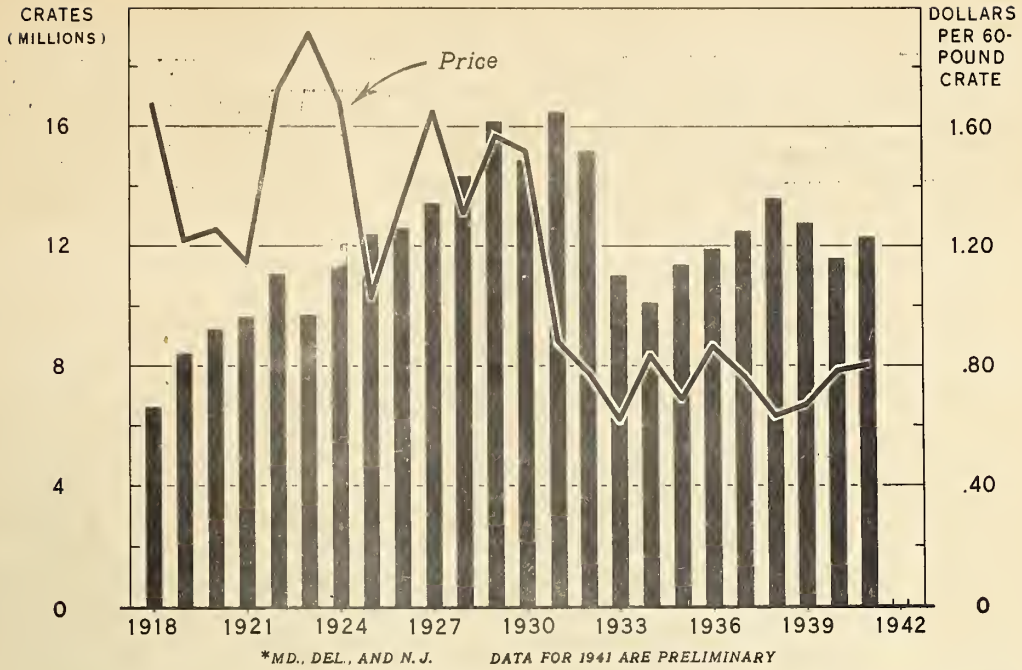
Competition in the Northeast

In marketing cantaloups in the Northeast, shippers of the Southern Pacific area pay freight charges that alone amount to more than the wholesale price received for Northeastern melons in Northeastern markets. But wholesale prices of Southern Pacific cantaloups are as much as three times the Northeastern price in the same markets and on the same days, because of superior quality and grade.

Although a large proportion of melons produced in other areas compete with Northeastern melons, there is little indication that an increase of this competition was responsible to any great degree for the sharply lower Northeastern prices of the 1930's. Prices of Northeastern melons apparently were affected by changes of supply in other areas, but not to an extent which would account for the sharp drop in prices between 1930 and 1940. Figure 8 shows that the sharp price decline for Northeastern melons which occurred during the 1930's was not coincidental with sharp production increases in other areas. Rather, production in other areas leveled off and then declined sharply.

On the other hand, figure 9 shows how prices fell as production in the Northeast increased. Thus, between 1928 and 1930, Delaware, New Jersey, and Maryland, the principal producing States in the Northeast, shipped 14 percent of all cantaloups unloaded at New York City, whereas in both 1931-33 and 1939-41, 26 percent of unloads came from these States (table 5). It appears that a

MUSKMELONS: PRODUCTION IN AREAS OTHER THAN NORTHEASTERN STATES*, AND PRICE RECEIVED BY FARMERS IN NORTHEASTERN STATES, 1918-41



U. S. DEPARTMENT OF AGRICULTURE FIGURE 8 NEG. 42409 BUREAU OF AGRICULTURAL ECONOMICS

MUSKMELONS: PRODUCTION AND PRICE RECEIVED BY FARMERS, MARYLAND, DELAWARE, AND NEW JERSEY, 1918-41

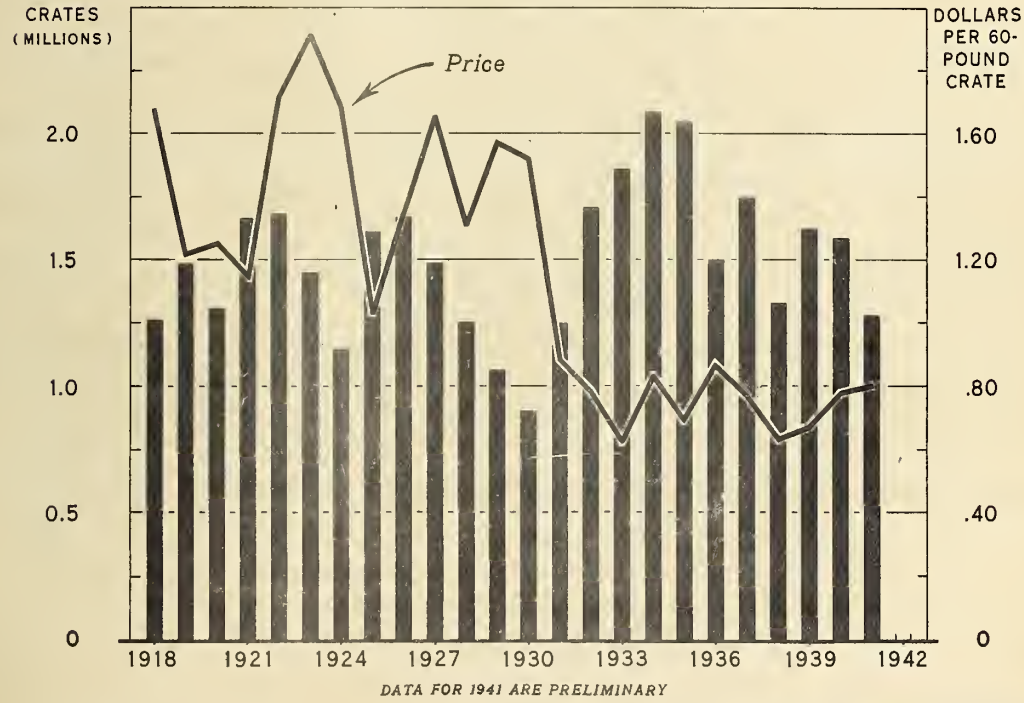


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FIGURE 9

Table 5.- Rail, boat and truck 1/ unloads of cantaloups at New York City, by source 1928-41 2/

Year	Unloads					Percentage 3-State unloads are of total unloads
	Delaware	New Jersey	Maryland	3-State total	Total unloads from all sources	
	Cars	Cars	Cars	Cars	Cars	Percent
1928	204	41	576	821	4,825	17
1929	139	18	383	540	4,622	12
1930	133	25	303	461	4,407	11
1931	225	46	605	876	4,517	19
1932	317	218	757	1,292	4,366	30
1933	318	148	608	1,074	3,663	29
1934	245	174	583	1,002	3,259	31
1935	239	136	773	1,148	3,316	35
1936	371	64	1,042	1,477	3,565	41
1937	292	88	1,257	1,637	4,119	40
1938	189	34	651	874	3,349	26
1939	305	48	843	1,196	3,997	30
1940	335	66	628	1,029	3,732	28
1941	159	27	466	652	3,500	19

1/ Reduced to equivalent rail cars.
2/ 1941, preliminary.

Compiled from reports of the Bureau of Agricultural Economics.

contributing factor to the low Northeastern prices of the 1930's was the relatively high level of production within the Northeastern area itself, rather than increased competition from other areas. Lower consumer purchasing power was the chief factor, but lower quality was also important. Continued low quality will tend to perpetuate low Northeastern prices.

If Northeastern producers can solve their quality problem, they may benefit from larger markets, from less interregional competition, and from higher prices. On some farms the improvement of quality would involve considerably higher costs and would offset any gain in income. On others, such adjustments could be profitable.

THE PROSPECT FOR MUSKMELON PRODUCTION

Prospective Demand and Prices

Higher levels of demand and prices for commercial muskmelons may be expected in the next 5 years, compared with the decade of the 1930's, as a result of: (1) Higher levels of purchasing power, especially affecting the demand for a semi-luxury product such as muskmelons, (2) restrictions on the purchases of many goods during the war period with the subsequent channelizing of purchasing power to other commodities like muskmelons, (3) more widespread knowledge concerning the value of melons in the diet, and (4) the influence on the diet of modern modes of living. The strain on productive resources during the war may tend to lower production and, until disease control is more effective, relatively small supplies of good-quality melons will be available, particularly if there are shortages of disease-controlling chemicals. Higher prices will be partially offset by higher costs and production and transportation difficulties associated with the war. In most areas, because of the fixed nature of many costs, higher prices will result in substantial benefit to growers. 10/

Although higher prices for muskmelons are indicated in the next few years, lower costs in the longer run resulting from more efficient production methods, and greater competition from other melons and fruits may be important in tending to lower prices. Greater production of muskmelons may also be an important factor. New and improved disease-resistant varieties may be developed and, if so, production will rise once again in those areas which have been curtailing output because of disease. Also, if the loss of foreign markets for certain farm products such as cotton is permanent, shifts will be made to alternatives like muskmelons which offer a relatively uninterrupted domestic demand. Finally, the forces tending to create higher prices during the war years are likely to be modified after the war. Although population is expected to increase until about 1960, and although varieties and quality may improve and food habits may be favorable, moderate prices on higher levels than in the 1930's, but lower compared with the war years of the 1940's seem probable in the long run. Changes in prices of muskmelons should not materially differ from changes in the level of prices of all market truck crops. Shifts in fundamental prices and demand factors, other than those associated with the muskmelon industry, could alter this prospect.

10/ Some areas may experience difficulty in transporting their crops. This could limit their market outlets and cause lower prices while benefiting areas close to markets. Also, the uncertainties associated with the war and the resultant uncertainty of the business outlook should be noted.

Muskmelons and the War

Muskmelons are not so vital as war commodities. Not an essential food, they rank as a semi-luxury compared with many other foods. Production of muskmelons declined during World War I. What effect will the present conflict have on the industry?

So long as purchasing power continues to increase, greater demand is in prospect. To meet this demand, greater production is desirable where practicable. As demand for a commodity like muskmelons does not compete directly with war needs for foods under the Lend-Lease and other programs, consumer purchasing power might well be encouraged in this direction. But where production of muskmelons requires labor, materials, and transportation facilities that may be needed for the production of more essential commodities, the relative unimportance of muskmelons must be recognized. For example, many melons are shipped great distances and a shortage of shipping facilities may require that melons be placed in a secondary position in the allocation of priorities for shipping space. Also, short supplies of insecticides and fungicides may necessitate allocation of the greater proportion of supplies to more vital commodities. It is to be expected that wherever necessary, resources will be directed toward the production of essential commodities and, as a result, production of muskmelons may decline for the duration of the war.

Prospective Trends by Areas

Besides the over-all factors, particular forces appear to influence the trend of muskmelon production in each area.

Production in the Northeast has been hampered by relatively low yields, quality, and prices, particularly in Delaware and Maryland. Value per acre for cantaloups has fallen relative to other crops, especially in Maryland, tending to make production less profitable compared with the production of other truck crops. So long as low-quality production continues, competition from other areas will be great and prices will be low.

If the Northeastern area could improve the quality and yield of its melons, an upward trend in both prices and production would be possible. Consumers would pay higher prices for a better quality product. Northeastern producers are located near the large markets and their transportation costs are low. They are thus in a favorable competitive position in these markets, providing the quality of their melons is good. Better quality could be achieved by greater disease control, which would also raise yields.

In the next few years, Northeastern demand may be increased indirectly by disease-curtailed production in the Imperial Valley and a possible shortage of transportation facilities for areas that ship great distances.

Although disease has wreaked havoc in some of the Southern Pacific areas and although low prices during the depression discouraged production, this area is still the best suited for all types of muskmelon production in all producing seasons. Costs of transportation are high but high yields and multi-variety, good-quality production enable growers to market their melons in distant cities

even to compete with locally grown melons. Other areas may compete more sharply by improving quality and the Southern area may increase its early production, but other areas will probably be unable to meet the Southern Pacific advantage of producing winter-type melons. And until other areas produce more melons that are comparable in quality, yield, and earliness, the Southern Pacific area will be able to compete with these areas in their local markets. Also, because of the rising population, local demand will increase in the Southern Pacific area. In the war years, limited transportation facilities may present a problem for the area and until powdery mildew disease in the Imperial Valley is more fully controlled, production in this important section will probably continue at low levels.

The Southern area has been hampered in producing muskmelons by a downward yield trend that has resulted in extremely low value per acre. Also important have been quality and marketing problems. The southerly sections of the area have the advantage of producing early melons, which partially offsets high transportation and other costs, but expansion here is contingent on the improvement of yields and value per acre relative to other truck crops. The northerly sections have a relatively late marketing season and do not always produce melons that are of high quality or that are well packaged. Thus, Arkansas and Oklahoma have an unfavorable production prospect when compared with the area as a whole, although poor alternatives may force continued production. Yields are particularly low in this section, local population is declining, and production in the nearby Midwestern area has expanded. On the other hand, although the coastal section of the Southern area also has low yields and relatively poor quality, it is more favorably located in relation to prime markets and its marketing season is a few weeks earlier than that of the adjacent Northeastern area.

The Midwestern area will probably continue to supply moderately increased quantities of cantaloups to its sizable local markets. Low transportation expense favor production but improvement of quality where possible and higher yields would encourage it further. Cantaloups shipped into the area during the period of local production compete only because of their superior quality. But, a local demand for fair-quality, low-cost melons assures local producers of a market. Improvement of Midwestern quality would minimize the quality advantage of competing cantaloups and would expand the local market for Midwestern cantaloups, although competition of winter-type melons would continue and supplies of melons would arrive from other areas in seasons when local production is impracticable. In the next few years, aside from higher prices, demand may be increased by the lower production in the Imperial Valley and perhaps by a shortage of long-haul transportation facilities.

Colorado-Utah melons are marketed at the end of the summer when both demand and prices are low. Transportation costs are high for surplus shipments to the large markets. Although yields and quality are good, only moderate production increases may be expected. In the next few years, this area may be faced by transportation problems, similar to those of the Southern Pacific area.

The Northern Pacific area also produces melons at the end of the summer when demand and prices are low. Transportation costs are high when melons are shipped to the large Eastern markets, but the area is favorably situated for supplying local demand. Yields and quality are good and population is increasing in local markets. Production will probably increase but chiefly for local needs.

In summary, those areas such as the Southern Pacific area which have good yields of high quality and multi-variety production may be expected to maintain or increase production in the next decade. Areas with low yields and low quality, such as Arkansas and Oklahoma, that produce summer melons for surplus shipment may have a less favorable prospect although poor alternatives may force continued production. The Northeastern, Midwestern, and Northern Pacific areas which produce melons for local needs will be assured of part of their local markets, although these markets could be expanded and returns increased in many sections by the improvement of quality. In the next few years, production and marketing resources will be taxed to the utmost and, although demand will be greater, production may not increase sufficiently to adjust itself to this increased demand, particularly if disease control lags.

Suggestions for Improving Quality

On many farms, particularly those in the North and Southeast, much could be done to improve the quality of melons grown. Quality adjustments could be made in the following ways:

(1) Better seed and varieties could be used.
(2) Improved soil-conservation and crop-rotation practices could be exercised.
(3) Disease control could be improved. More effective crop rotations would be of benefit. 11/ On some farms, more spraying and dusting machinery could be profitably utilized. Although purchases of expensive disease-control machinery may not be advisable for small acreages, cooperative purchase of machinery for use on several farms has been suggested as a means of overcoming this difficulty. On other farms it might be advisable to expand acreage to permit the profitable use of machinery.
(4) Melons could be picked when mature. It is true that melons which are marketed early bring relatively high prices. But at the height of the season, ripe "full slip" melons could be picked rather than the green melons which are often marketed. 12/
(5) More care could be practiced in marketing. Unwashed, poorly packed melons and melons that are sold in bulk bring lower prices and even become worthless by damage. In many instances, additional costs involved in the improvement of marketing methods would be small or would utilize only unused family labor.

11/ Crop rotations adapted to the needs of individual areas have proved to be a method of reducing disease infestation, as well as of maintaining the nutritive quality of the soil. In general, it has been recommended that a melon crop be planted on a piece of land only once in 5 or 6 years. Most other vine crops should not be planted on land between melon plantings. Land that has been in alfalfa or clover for a period of years is apt to be good muskmelon land and free from muskmelon disease organisms.

12/ It is argued by some that poor-quality melons marketed early in the season, destroy public confidence for the entire crop of Northeastern melons and in this way, lower Northeastern prices.

SUPPLEMENTARY TABLES

Table 6.- Representative rail charges for shipping various size crates 1/ of cantaloups under standard refrigeration 2/ from the Imperial Valley of California to certain cities 3/

City	Charge per crate		
	78-pound jumbo crate	68-pound standard crate	57-pound pony crate
	Dollars	Dollars	Dollars
Albany, New York	$1.75	$1.52	$1.28
Atlanta, Georgia	1.73	1.51	1.27
Baltimore, Maryland	1.75	1.52	1.28
Birmingham, Alabama	1.62	1.41	1.19
Boston, Massachusetts	1.76	1.53	1.29
Buffalo, New York	1.69	1.48	1.24
Chicago, Illinois	1.37	1.19	1.00
Cincinnati, Ohio	1.61	1.40	1.18
Denver, Colorado	1.08	.94	.79
Detroit, Michigan	1.62	1.41	1.18
Hartford, Connecticut	1.75	1.53	1.29
Indianapolis, Indiana	1.54	1.34	1.12
Memphis, Tennessee	1.37	1.19	1.00
Miami, Florida	1.76	1.53	1.29
Milwaukee, Wisconsin	1.37	1.19	1.00
Minneapolis, Minnesota	1.37	1.19	1.00
New Haven, Connecticut	1.76	1.53	1.29
New Orleans, Louisiana	1.37	1.19	1.00
New York, New York	1.75	1.52	1.28
Philadelphia, Pennsylvania	1.75	1.52	1.28
Pittsburgh, Pennsylvania	1.69	1.48	1.24
Portland, Oregon	1.12	.98	.82
Rochester, New York	1.75	1.52	1.28
San Antonio, Texas	1.29	1.12	.94
San Francisco, California	.59	.52	.43
Seattle, Washington	1.13	.99	.83
St. Louis, Missouri	1.37	1.19	1.00
Syracuse, New York	1.75	1.52	1.28
Washington, D. C.	1.75	1.52	1.28

1/ Based on a load of 21,000pounds per rail car.
2/ Does not include salting or precooling.
3/ For information only.

Source: Federal-State Market News Service "Preliminary review of the 1940 Imperial Valley cantaloup season", July 2, 1940.

Table 7.- Weekly wholesale cantaloup prices in the New York market for sales in less-than-carlot quantities, by source, 1939

Year and date	Price by source and container size 1/										
	Mexico	California	Georgia, South Carolina and North Carolina	Arizona	Colorado	Utah	Eastern Shore, Maryland and Delaware	Maryland	Pennsylvania	New Jersey	New York
	Jumbo 36's	Jumbo 36's	Jumbo 36's	Jumbo 36's	Jumbo 45's and 36's	Jumbo 45's and 36's	2/3 crate all sizes	2/3 crate 24's	Bushel basket	Bushel basket	Bushel basket
1939 Week of 2/	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Apr. 4- 8	9.50										
10-15	5.75										
17-22	5.38										
24-29	5.60										
May 15-20		7.10									
22-27		5.79									
29-June 3		4.35									
June 5-10		3.94									
12-17		3.39	1.88								
19-24		3.00		3.30							
26-July 1		2.76	1.36	2.81							
July 3- 8		2.46		2.60							
10-15		2.67		2.79							
17-22		3.42		2.99				1.45			
24-29		3.35		2.85				1.44			
July 31-Aug. 5		3/ 2.94					.56	4/ .88		.38	
Aug. 7-12		3/ 3.48					.62	4/ .81		.40	
14-19		3/ 3.54			2.68		.67			.45	
21-26		3/ 3.71			3.19	4.25	.96			.66	.91
Aug. 28-Sept. 2		3/ 3.31			2.65	3.52	.88			1.00	1.00
Sept. 4- 9		3/ 3.35			2.52	3.08			.53	.44	.52
11-16		3/ 3.22			2.79	3.19			.41		
18-23		3/ 3.92			3.68	3.94					
25-30		3/ 4.25			3.90	3.69					
Oct. 2- 7		3/ 4.00			3.83						
9-14					4.50						
16-21					4.42						

1/ Jumbo crate contains approximately 3,739 cubic inches and 2/3 crate varies from 2,735 cubic inches to 4,664 cubic inches. 2/ Week ending Saturday. Sundays excluded. 3/ Jumbo 45's and 36's. 4/ Jumbo 36's.

Table 8.- Acres for harvest for the commercial crop of muskmelons for market, by areas and for four Northeastern States, 1918-42

Year	United States	Area 1/ and State									
		Southern Pacific	Southern	Northern Pacific	Colorado and Utah	Mid-western	Northeastern				
							Total	Delaware	Maryland	New Jersey	New York 2/
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
1918	51,640	21,430	9,940	500	4,600	5,540	9,630	1,860	3,750	4,020	
1919	65,020	27,430	13,490	550	6,690	5,720	11,140	2,470	4,400	4,270	
1920	72,500	31,910	13,220	900	8,280	6,670	11,520	2,360	4,780	4,380	
1921	78,830	32,780	16,800	700	8,200	6,850	13,500	3,500	5,480	4,520	
1922	99,520	44,780	22,960	1,120	10,000	8,240	12,420	3,500	5,560	3,360	
1923	80,430	36,720	15,040	770	8,620	7,320	11,960	3,200	4,900	3,860	
1924	93,930	47,480	16,550	1,530	8,040	8,210	12,120	1,740	5,930	4,450	
1925	93,710	47,110	16,660	1,400	7,900	8,250	12,390	2,500	5,570	4,320	
1926	102,310	53,190	15,940	1,300	11,670	7,590	12,620	2,000	6,120	4,500	
1927	105,230	58,080	12,790	1,960	12,100	7,200	13,100	2,000	7,100	4,000	
1928	102,840	58,380	12,700	1,750	9,000	9,770	11,240	2,200	6,040	3,000	
1929	108,670	65,940	7,970	2,450	11,000	9,810	11,500	2,200	6,800	2,500	
1930	129,010	84,160	9,370	2,750	10,000	10,420	12,310	2,200	7,010	3,100	
1931	138,310	83,600	18,770	2,300	8,350	11,240	14,050	2,500	7,550	4,000	
1932	135,780	80,280	17,500	2,250	8,070	11,880	15,800	2,700	8,100	5,000	
1933	109,100	55,840	13,140	2,250	9,070	13,350	15,450	3,000	7,200	4,750	
1934	97,500	44,850	16,400	2,600	3,730	13,430	16,490	3,090	7,400	6,000	
1935	114,280	51,800	21,850	2,850	6,750	14,170	16,860	3,460	8,500	4,900	
1936	111,890	46,840	22,750	3,400	8,450	14,550	15,900	3,500	8,100	4,300	
1937	115,290	49,790	23,800	2,850	7,750	14,900	16,200	3,600	8,500	4,100	
1938	122,250	49,550	27,000	2,450	10,050	15,700	17,500	3,800	9,400	4,300	
1939	133,410	55,640	30,600	2,550	10,820	16,600	17,200	3,600	9,100	4,500	
1940	123,770	52,030	31,000	2,690	12,120	15,630	15,300	3,300	8,000	4,000	
1941	128,410	55,570	30,500	2,500	7,000	15,740	17,100	3,300	7,500	3,800	2,500
1942 3/	106,880	46,810	22,300	2,450	7,050	12,870	15,400	2,800	6,600	3,500	2,500

1/ See table 3 for component States of different areas.
2/ New York data available only for 1941 and 1942.
3/ Preliminary.

Compiled from annual processed reports of the Bureau of Agricultural Economics on commercial truck crops for shipment and summary tables issued Oct. 20, 1937 and Sept. 1939 for years 1918-27 and 1928-37 respectively.

Table 9.- Yield per acre 1/ for the commercial crop of muskmelons for market, by areas and for four Northeastern States, 1918-42

Year	United States	Area 2/ and State									
		Southern Pacific	Southern	Northern Pacific	Colorado and Utah	Mid-western	Northeastern				
							Average	Delaware	Maryland	New Jersey	New York 3/
	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/	Crates 4/
1918	152	190	94	156	176	126	130	117	174	96	
1919	152	190	92	160	165	126	133	118	174	100	
1920	144	179	91	217	150	124	114	111	135	92	
1921	143	169	99	194	182	117	124	96	154	108	
1922	128	138	88	193	175	106	135	120	160	109	
1923	139	183	67	190	125	103	121	115	148	92	
1924	142	179	85	197	145	97	94	96	100	86	
1925	150	179	76	182	181	124	130	120	162	95	
1926	140	158	73	168	170	108	133	120	163	97	
1927	142	168	84	125	127	115	113	110	125	93	
1928	153	187	84	110	130	108	111	135	112	93	
1929	159	178	74	138	230	101	92	105	85	101	
1930	122	131	69	125	200	84	73	85	55	105	
1931	128	149	79	139	141	98	89	90	90	87	
1932	125	142	66	130	144	104	108	125	103	107	
1933	118	125	74	147	169	102	121	120	110	138	
1934	125	161	54	128	115	94	126	140	130	115	
1935	118	163	64	98	162	93	121	150	115	110	
1936	120	157	57	189	146	94	95	105	95	85	
1937	124	167	58	161	129	90	107	110	100	120	
1938	122	182	51	141	167	79	76	80	75	75	
1939	108	135	57	233	147	80	94	95	95	93	
1940	103	122	61	215	127	81	103	110	110	85	
1941	108	144	54	192	86	104	91	90	90	80	111
1942 5/	118	146	74	195	145	86	100	95	90	100	133

1/ Includes some unharvested production.
2/ See table 3 for component States of different areas.
3/ New York data available only for 1941 and 1942.
4/ Standard crates containing approximately 60 pounds.
5/ Preliminary.

Compiled from annual mimeographed reports of the Bureau of Agricultural Economics on commercial truck crops for shipment and summary tables issued Oct. 20, 1937 and Sept. 1939 for years 1918-27 and 1928-37 respectively.

Table 10.- Production 1/ of the commercial crop of muskmelons for market, by areas and for four Northeastern States 1918-42

Year	United States	Area 2/ and State: Southern Pacific	Southern	Northern Pacific	Colorado and Utah	Mid-western	Northeastern: Total	Delaware	Maryland	New Jersey	New York 3/
	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/	1,000 crates 4/
1918	7,847	4,066	939	78	810	698	1,256	218	652	386	
1919	9,860	5,216	1,245	88	1,104	723	1,484	291	766	427	
1920	10,475	5,701	1,201	195	1,242	826	1,310	262	645	403	
1921	11,298	5,541	1,661	136	1,492	800	1,668	336	844	488	
1922	12,730	6,200	2,018	216	1,750	870	1,676	420	890	366	
1923	11,163	6,732	1,005	146	1,078	754	1,448	368	725	355	
1924	13,329	8,502	1,413	301	1,163	804	1,143	167	593	383	
1925	14,015	8,433	1,258	255	1,430	1,027	1,612	300	902	410	
1926	14,285	8,429	1,159	218	1,984	821	1,674	240	998	436	
1927	14,932	9,760	1,079	245	1,537	831	1,480	220	888	372	
1928	15,689	10,949	1,070	192	1,170	1,056	1,252	297	676	279	
1929	17,242	11,730	594	338	2,530	989	1,061	231	578	252	
1930	15,760	10,992	647	344	2,000	878	899	187	386	326	
1931	17,750	12,414	1,488	319	1,176	1,100	1,253	225	680	348	
1932	16,931	11,368	1,163	294	1,160	1,239	1,707	338	834	535	
1933	12,916	6,959	968	331	1,533	1,262	1,863	360	847	656	
1934	12,202	7,216	878	334	429	1,260	2,085	433	962	690	
1935	13,452	7,315	1,407	281	1,091	1,322	2,036	519	978	539	
1936	13,410	7,357	1,306	642	1,235	1,366	1,504	368	770	366	
1937	14,266	8,339	1,386	460	1,000	1,343	1,738	396	850	492	
1938	14,973	8,999	1,371	346	1,680	1,246	1,331	304	705	322	
1939	14,402	7,528	1,739	595	1,586	1,330	1,624	342	864	418	
1940	13,202	6,370	1,873	578	1,536	1,262	1,583	363	880	340	
1941	13,898	7,972	1,655	479	603	1,635	1,554	297	675	304	278
1942 5/	12,626	6,832	1,650	477	1,021	1,104	1,542	266	594	350	332

1/ Includes some quantities not harvested because of market conditions - Southern Pacific area: 2,920,000 crates in 1932; 816,000 in 1933; 350,000 in 1935; 410,000 in 1936; 1,532,000 in 1938. Southern area: 433,000 crates in 1931; 182,000 in 1932; 37,000 in 1933; 52,000 in 1940; Colorado-Utah area: 632,000 in 1938; Northern Pacific area: 63,000 crates in 1940; Midwestern area: 200,000 crates in 1941.

2/ See table 3 for component States of different areas.

3/ New York data available only for 1941 and 1942.

4/ Standard crates containing approximately 60 pounds.

5/ Preliminary.

Compiled from annual mimeographed reports of the Bureau of Agricultural Economics on commercial truck crops for shipment and summary tables issued Oct. 20, 1937 and Sept. 1939 for years 1918-27 and 1928-37 respectively.

Table 11.- Farm price per crate 1/ for the commercial crop of muskmelons for market, by areas and for three Northeastern States, 1918-41

Year	United States	Area 2/ and State								
		Southern Pacific	Southern	Northern Pacific	Colorado and Utah	Mid-western	Northeastern			
							Average	Delaware	Maryland	New Jersey
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1918	1.92	2.29	1.34	1.79	1.50	1.51	1.67	1.60	1.80	1.50
1919	1.52	1.67	1.45	1.75	1.25	1.58	1.22	.95	1.25	1.35
1920	1.59	1.66	1.75	1.50	1.60	1.47	1.25	.90	1.30	1.40
1921	1.37	1.56	1.39	1.20	.85	1.49	1.15	1.20	1.10	1.20
1922	1.82	2.10	1.38	1.80	1.50	1.61	1.72	1.55	1.80	1.70
1923	1.95	2.11	1.66	2.00	1.70	1.38	1.91	1.65	2.00	2.00
1924	1.44	1.47	1.36	1.30	1.20	1.37	1.68	1.60	1.60	1.85
1925	1.49	1.72	1.43	.60	.90	1.34	1.03	1.10	.90	1.25
1926	1.31	1.34	1.29	1.30	1.15	1.32	1.35	.90	1.40	1.50
1927	1.48	1.52	1.47	1.60	1.05	1.47	1.65	1.25	1.70	1.75
1928	1.32	1.42	1.01	.61	.94	1.23	1.31	1.00	1.21	1.90
1929	1.31	1.40	1.47	.80	.83	1.41	1.57	1.15	1.45	2.25
1930	1.21	1.16	1.21	1.20	1.20	1.75	1.52	1.50	1.55	1.50
1931	1.00	1.04	.78	.75	.84	1.15	.88	.75	.75	1.20
1932	.83	.89	.52	.60	.69	.95	.78	.65	.86	.75
1933	.74	.95	.73	.48	.55	.74	.62	.75	.50	.70
1934	1.10	1.24	.83	.89	.91	.99	.83	.90	.90	.70
1935	.91	1.06	.79	.70	.76	.75	.69	.50	.75	.80
1936	1.02	1.23	.80	.74	.52	.93	.86	.85	.85	.90
1937	1.12	1.26	.84	.66	1.21	1.03	.77	.60	.65	1.10
1938	1.03	1.25	.78	.96	.45	.91	.63	.55	.60	.75
1939	.98	1.23	.68	.68	.76	.77	.67	.55	.60	.90
1940	1.09	1.45	.73	.49	.63	1.08	.78	.70	.70	1.05
1941 3/	1.23	1.46	.88	.82	.73	1.12	.80	.65	.65	1.30

1/ Standard crates containing approximately 60 pounds.
2/ See table 3 for component States of different areas.
3/ Preliminary.

Compiled from annual mimeographed reports of the Bureau of Agricultural Economics on commercial truck crops for shipment and summary tables issued Oct. 20, 1937 and Sept. 1939 for years 1918-27 and 1928-37 respectively.

Table 12.- Farm value per acre for the commercial crop of muskmelons for market, by areas and for three Northeastern States, 1918-41

Year	United States	Area 1/ and State								
		Southern Pacific	Southern	Northern Pacific	Colorado and Utah	Mid-western	Northeastern			
							Average	Delaware	Maryland	New Jersey
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
1918	292	435	127	280	264	190	218	188	313	144
1919	231	317	134	280	206	199	162	112	218	135
1920	230	297	159	324	240	183	142	100	175	129
1921	197	264	138	233	155	174	142	115	169	130
1922	232	291	121	347	263	170	231	186	288	185
1923	271	387	111	379	213	142	231	190	296	184
1924	204	263	116	256	174	134	159	153	160	159
1925	222	309	108	109	163	166	133	132	146	119
1926	183	213	93	218	196	142	180	108	228	145
1927	210	256	124	200	133	169	186	138	213	163
1928	202	266	85	67	122	133	146	135	135	177
1929	209	248	109	111	191	142	145	121	123	227
1930	148	151	83	151	240	133	111	127	85	158
1931	129	155	44	104	118	113	78	68	68	105
1932	85	94	29	79	99	99	85	81	89	80
1933	88	104	51	71	93	70	75	90	55	97
1934	137	200	45	114	104	93	105	126	117	81
1935	105	143	51	69	123	70	84	75	86	86
1936	119	183	46	139	76	88	82	89	81	77
1937	138	212	49	107	156	93	82	66	65	132
1938	107	138	40	136	47	72	48	44	45	56
1939	106	167	39	159	112	62	63	52	57	84
1940	111	176	43	94	80	87	80	77	77	89
1941 2/	131	209	48	157	62	102	70	58	59	104

1/ See table 3 for component States of different areas.
2/ Preliminary.

Compiled from annual mimeographed reports of the Bureau of Agricultural Economics on commercial truck crops for shipment and summary tables issued Oct. 20, 1937 and Sept. 1939 for years 1918-27 and 1928-37 respectively.